

Taxonomic studies in *Thomasia* and *Lasiopetalum* (Sterculiaceae)

by Susan Paust*

Abstract

Four new species of *Thomasia* and six new species of *Lasiopetalum* are described; *Thomasia formosa* sp. nov., *T. gardneri* sp. nov., *T. microphylla* sp. nov., *T. tremandroides* sp. nov.; *Lasiopetalum cardiophyllum* sp. nov., *L. compactum* sp. nov., *L. glabratum* sp. nov., *L. lineare* sp. nov., *L. monticola* sp. nov. and *L. rotundifolium* sp. nov.

Two species of *Lasiopetalum* are reduced to synonymy: *L. angustifolium* W. V. Fitzg. is synonymous with *L. oppositifolium* F. Muell.; and *L. acutiflorum* Turcz. with *L. indutum* Steud.

All specimens cited are housed at PERTH, except where otherwise indicated.

***Thomasia tremandroides* S. Paust sp. nov.** (Figures 1 and 11)
(*tremandroides* = resembling some species of Tremandraceae)

Folia ovata, brevissime petiolata, 4–8 x 2.5–5 mm stellato-tomentosa. *Stipulae* foliaceae, 2.5 mm longae. *Racemus* pilis stellatis et simplicibus-moniliformibus tomentosus. *Bracteolae* 3, anguste lineares, calycem subtus. *Calyx* 8 mm longus, stellato-hirsutus lobis 5 ovatis. *Petala* 5, spatulata, 1 mm longa. *Antherae* 5, fere sessiles, anguste triangulares, 3 mm longae. *Staminodia* 5, clavata, 1 mm longa. *Ovarium* 3-loculare, 1 mm longum pilis glandulosis et stellatis sparsim tomentosum. *Stylus* 2 mm longus, glaber.

Type: 33 mi N of Wubin towards Perenjori, Western Australia, 8 Oct. 1972, S. Paust 1319. *Holo*: PERTH; *iso*: CANB, K.

Erect, multistemmed, woody *perennial*, 10–60 cm high. *Branchlets* tomentose with stellate and simple-moniliform hairs. *Leaves* alternate; petiole minute; lamina ovate, chartaceous, 4–8 mm long, 2.5–5 mm wide, stellate-tomentose; margin undulate, slightly recurved. *Stipules* foliaceous, ovate-orbicular, often oblique, 2.5 mm long. *Racemes* leaf-opposed, 20–40 mm long, 1–4 flowered, indumentum similar to that of the branchlets; peduncle 10–30 mm long; pedicel 3–7 mm long; bracts linear, 2 mm long; bracteoles 3, narrow linear, 5 mm long, subtending calyx. *Calyx* angular in bud, mauve-pink, exduplicate and papery at anthesis, 8 mm long, stellate-hairy, divided to below the middle into 5 ovate lobes, ribs thickened especially at base. *Petals* 5, spatulate, 1 mm long, purple-black. *Anthers* 5, almost sessile, narrowly triangular, 3 mm long, purple-black. *Staminodes* 5, obscured by anthers, clavate, 1 mm long, alternate and basally connate with stamens. *Ovary* globose, 1 mm long, purple-black, with scattered simple, glandular and stellate hairs, 3-celled; style filiform, 2 mm long, glabrous, yellowish; ovules 3–4 per locule. *Seed* not seen.

Distribution: South-west Western Australia; from Bencubbin north to the Murchison River.

Murchison River, Oct. 1961, *de la Hunty*; Boolardy Station, *A. B. Cashmore* 128; Canna, *C. A. Gardner* 2691; near Morowa, *W. E. Blackall* 2817; 1 mi S of Caron, *S. Paust* 1309; 9.2 mi E of Bindi Bindi, *S. Paust* 1026; 6 mi S of Ballidu, *J. W. Green* 791; 13 mi N of Bencubbin, *W. E. Blackall* 3317; (?) Mt. Barker to Walpole, 31 Aug. 1965, *F. W. Humphreys*. (It is extremely doubtful that the collection data of the Humphreys specimen are correct.)

Thomasia tremandroides is distinguished from other species of *Thomasia* by its small papery ovate leaves and by the presence and morphology of its staminodes.

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HOLOTYPE

Western Australian Herbarium

Thomasia tremandroides S. Paust

DETERMINAVIT *Susan Paust* June 1973

WESTERN AUSTRALIAN HERBARIUM, PERTH
Flora of Western Australia

Thomasia

Calyx pink-purple, tips darker
becoming cream coloured at base.
Petals and anthers deep purple-
black. Fruit 2½-3mm. Branches
matted together, spindly yellowish.

Loc. 53mi N of Wubin towards Kerenyon

Coll. Susan Paust 1319 S.A. 1972

WESTERN AUSTRALIAN HERBARIUM, PERTH
Flora of Western Australia

Loc.

Coll.

19

Figure 1—*Thomasia tremandroides* sp. nov. Holotype—S. Paust 1319.



Figure 2—*Thomasia formosa* sp. nov. Holotype—± 5 mi W of Three Springs, C. Chapman.

Thomasia formosa S. Paust sp. nov. (Figures 2 and 11)

(formosa = handsome)

Frutex stellato-tomentosus. *Folia* angustissime ovata, petiolata, 20–40 x 4–10 mm. *Stipulae* oblique ovatae, 4–7 mm longae. *Racemi* saepe ramosi. *Bracteolae* 3, lanceolatae, calycem subtus. *Calyx* 10 mm longus, stellato-hirsutus, lobis 5 ovatis. *Petala* 5, spathulata, 1 mm longa. *Stamina* 5, filamentis 1 mm longis, antheris anguste triangularibus 3·5 mm longis. *Ovarium* 3-loculare, 2 mm longum, albo-stellato-tomentosum. *Stylus* 3 mm longus, glaber.

Type: ± 5 mi W of Three Springs, Western Australia, 29 Sept. 1972. *C. Chapman* s.n. *Holo*: PERTH, iso: K.

Erect, multistemmed, woody *perennial*, up to 50 cm high; branchlets, leaves and inflorescence closely stellate-tomentose, rufous. *Leaves* alternate; petiole 5 mm long; lamina very narrowly ovate, 20–40 mm long, 4–10 mm wide, rugose above; margin ± crenulate, recurved. *Stipules* foliaceous, obliquely ovate, 4–7 mm long. *Racemes* leaf-opposed, 70–120 mm long, 7- many-flowered, often branched; peduncle 30–40 mm long; pedicels 10 mm long; bracts ovate 1–3 mm long; bracteoles 3, lanceolate, reflexed, 7 mm long, subtending calyx. *Calyx* pink, papery, 10 mm long, stellate-hairy, divided to below the middle into 5 ovate lobes, ribs thickened. *Petals* 5, spathulate, slightly concave, 1 mm long, glabrous. *Stamens* 5; filaments linear, 1 mm long; anthers narrowly triangular, 3·5 mm long. *Ovary* globose, 2 mm long, white stellate-tomentose, 3-celled; style filiform, 3 mm long, glabrous, ovules 4–8 per locule. *Seed* not seen.

Distribution: South-west Western Australia; this species is known only from collections made 8 km W of Three Springs.

Thomasia formosa is similar to the more southern species. *T. angustifolia* Steud. and *T. petalocalyx* F. Muell. in that it has a tomentose, 3-celled ovary and a glabrous style. It is distinguished from these species by the much larger flowers and inflorescence and by its leaf form.

Thomasia microphylla S. Paust. sp. nov. (Figures 3 and 11)

(micro = small, phyllum = leaf)

Frutex squamis ut videtur ciliatis lepidotus. *Folia* ovato-oblonga, breviter petiolata, 2–10 x 1·5–5 mm, coriacea, supra glabra, subtus lepidota. *Stipulae* nullae. *Racemi* 1–2-floribus. *Bracteolae* 3, teretes. *Calyx* 8 mm longus, varie-lepidotus, lobis 5 ovatis. *Petala* 5, ovata, carnosa, 0·8 mm longa. *Stamina* 5, filamentis 1 mm longis, antheris oblongo-linearibus, 3 mm longis. *Staminodia* ± 5, teretia, 1·5 mm longa. *Ovarium* 3-loculare, 2 mm longum, dense lepidotum. *Stylus* 3 mm longus, praeter basem glaber.

Type: Mt. Short, at N end of Ravensthorpe Range, Western Australia, 30 Aug. 1963, *A. S. George* 5698. *Holo*: PERTH, iso: CANB, K.

Erect, multistemmed, woody *perennial*, 15–35 cm high, branchlets, leaves and inflorescence variably lepidote with apparently ciliate scales. *Leaves* alternate, slightly reflexed; petiole 1–2 mm long, lepidote; lamina ovate-oblong, slightly cordate, 2–10 mm long, 1·5–5 mm wide, entire, coriaceous, smooth to reticulate and glabrous above, lepidote below. *Stipules* absent. *Racemes* terminal, 10–40 mm long, 1–2 flowered, peduncle 10–30 mm long; pedicels 4–5 mm long; bracts terete, 1–1·5 mm long, often absent; bracteoles 3, terete, 1–2 mm long, subtending calyx. *Calyx* angular in bud, pale mauve, 7–9 mm long, finely stellate-lepidote, the outer surface with additional large brown scales, particularly on the prominent ribs, divided almost to the base into 5 broadly ovate lobes. *Petals* 5, ovate, concave, fleshy, normally glabrous, 0·8 mm long. *Stamens* 5; filaments oblong, 1 mm long; anthers oblong-linear, 3 mm long, shortly attenuate and yellow at apex. *Staminodes* 5, alternate with stamens, terete, 1·5 mm long, often absent. *Ovary* ovoid, 2 mm long, densely lepidote, 3-celled; style filiform, 3 mm long, sparsely lepidote at base, otherwise glabrous; ovules 2–3 per locule. *Fruit* a loculicidal capsule; seed 1 per locule, almost cylindrical, villous, 2 mm long, 0·9 mm wide.



Thomasia microphylla S. Paust

DETERMINAVIT Joan Paust June 1973

WESTERN AUSTRALIAN HERBARIUM
PERTH W.A.

Much branched, spreading shrub to 50cm
Fls subs. to lateral, among thick
mallee scrub
10 km. at V end of Ravenshoe
Loc. Range, W.
Coll. A. S. GEORGE 20 Aug 1963

WESTERN AUSTRALIAN HERBARIUM, PERTH
Flora of Western Australia

Loc. _____
Coll. _____

19

Figure 3—*Thomasia microphylla* sp. nov. Holotype—A. S. George 5698.

Distribution: South-west Western Australia; from Ongerup to east of Esperance.

10 mi E of Ongerup, *K. Newbey* 379; 22 mi S of Ravensthorpe, *E. Wittner* 397; 18 mi E of Ravensthorpe, *K. Newbey* 1312; 40 mi E and 10 mi N of Esperance turn off, *F. Lullfitz* 3579.

Thomasia microphylla has affinities with *T. stelligera* (Turez.) Benth., but is readily distinguished from that species by its smaller, ovate-oblong leaves.

***Thomasia gardneri* S. Paust sp. nov. (Figures 4 and 11)**

(named after the late C. A. Gardner, the collector of the type specimen and former Government Botanist of Western Australia)

Frutex squamis ut videtur ciliatis lepidotus. *Folia* anguste-ovata, breviter petiolata, 8–20 x 4–8 mm, coriacea, supra glabra, subtus lepidota. *Stipulae* nullae. *Racemi* 1–2-floribus. *Bracteolae* 3, teretes. *Calyx* 9 mm longus, intus stellato-hirsutus, extus lepidotus, lobis 5 ovatis. *Petala* 5, spatulata, chartacea, 1·5 mm longa, marginibus sparsim lepidotis. *Stamina* 5, filamentis 2 mm longis, antheris oblongis, 2 mm longis. *Ovarium* 5-loculare, 3 mm longum, dense lepidotum. *Stylus* 5 mm longus, praeter basem glaber.

Type: Near Mt. Holland, Western Australia, Sept. 1929, *C. A. Gardner* s.n. Holo: PERTH.

Erect, multistemmed, woody perennial, up to 50 cm high; branchlets, leaves and inflorescence variably lepidote with apparently ciliate scales. *Leaves* alternate, slightly reflexed; petiole 2–4 mm long, lepidote; lamina narrowly ovate, 8–20 mm long, 4–8 mm wide, slightly cordate, entire, coriaceous, smooth to reticulate and glabrous above, lepidote below. *Stipules* absent. *Racemes* terminal, 10–30 mm long, 1–2 flowered; peduncle 5–15 mm long; pedicels slightly clavate, 5 mm long; bracts terete, often absent, 2 mm long; bracteoles 3, terete, 2 mm long, subtending calyx. *Calyx* prominently veined, pink, 9 mm long, sparsely stellate-hairy within, lepidote outside (especially on the ribs), divided almost to the base into 5 ovate lobes. *Petals* 5, spatulate, papery, 1·5 mm long, apical margin sparsely lepidote otherwise glabrous. *Stamens* 5, filaments oblong, 2 mm long; anthers oblong, 2 mm long. *Staminodes* absent. *Ovary* ovoid, 3 mm long, densely lepidote, 5-celled; style simple, 1·5 mm long, sparsely lepidote at base, otherwise glabrous; ovules 2 per locule. *Seed* not seen.

Distribution: South-west Western Australia; near Mt. Holland.

Thomasia gardneri is known only from the type and other collections from the same locality made by C. A. Gardner in September 1929. Its affinities lie with *T. microphylla* S. Paust (see above), but it is distinguished by its larger leaves, 5-celled ovary and differently-shaped petals and anthers.

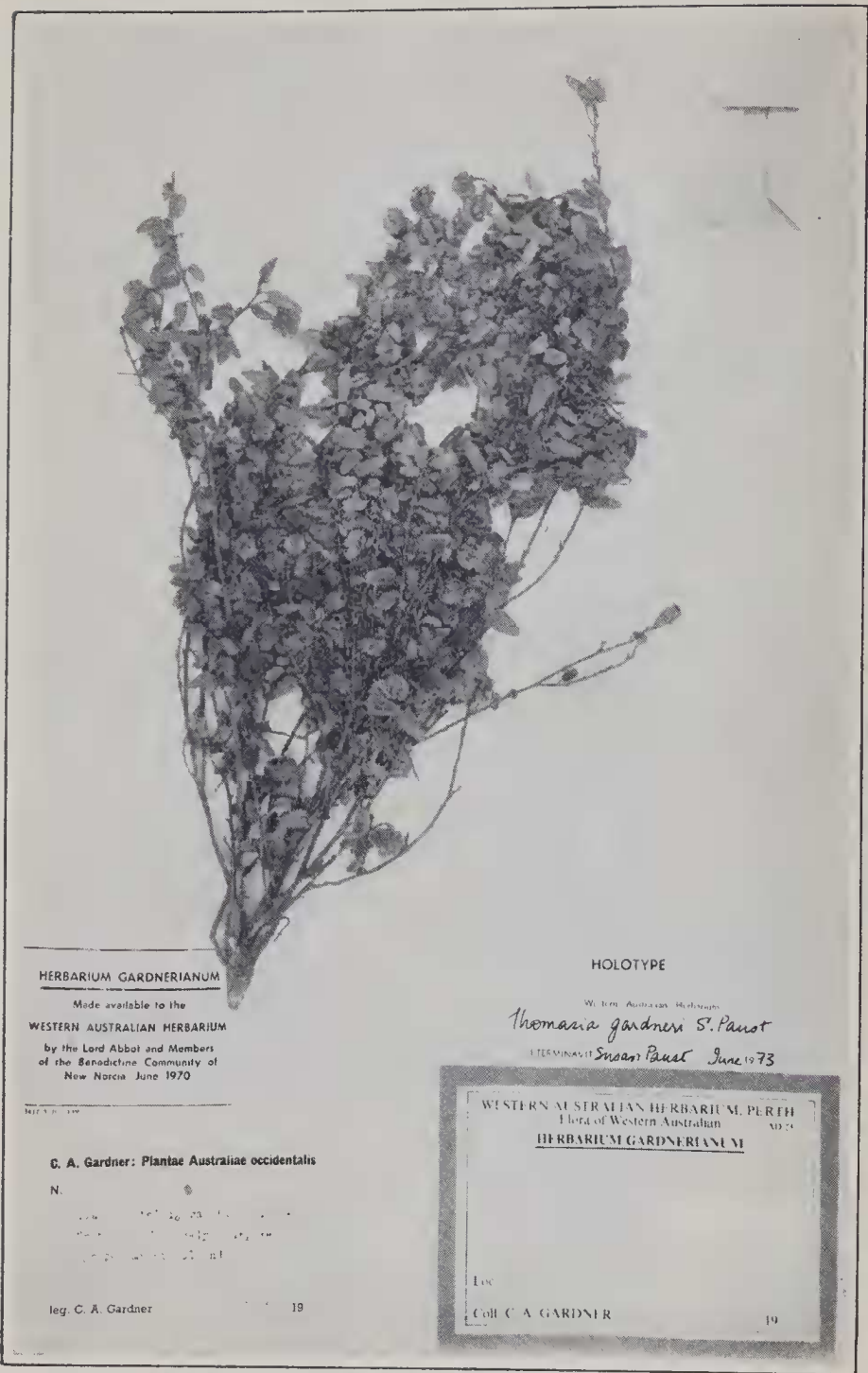
***Lasiopetalum lineare* S. Paust. sp. nov. (Figures 5 and 12)**

(linearis = linear, referring to the leaves)

Folia anguste-linearria, brevissime petiolata, 20–40 x 1–4 mm, supra glabra, subtus stellato-tomentosa, marginibus revolutis. *Cymae* in capitula laxa contractae. *Bracteolae* filiformes. *Calyx* 7 mm longus, intus glaber, extus stellato-tomentosus, lobis 5, lineari-lanceolatis. *Petala* 5, orbicularia, 0·5 mm longa. *Antherae* fere sessiles, late-oblongae, 1·5 mm longae. *Ovarium* 3-loculare, 1 mm longum, albo-stellato-tomentosum. *Stylus* 3 mm longus pilis stellatis grandibus reflexis albis hirsutus.

Type: Watheroo West, Western Australia, 4 Nov. 1954, *R. D. Royce* 4965. Holo: PERTH, iso: K.

Erect, multistemmed, woody perennial, up to 40 cm high. *Branchlets* stellate-tomentose. *Leaves* alternate; petiole minute; lamina narrowly linear, 20–40 mm long, 1–4 mm wide, normally tightly revolute, almost glabrous above, stellate-tomentose below. *Cymes* leaf opposed, \pm 8-flowered, closely stellate-tomentose, contracted into loose heads; peduncle 10–20 mm long; bracts filiform, 3 mm long; bracteoles normally 1, filiform, 4 mm long, subtending calyx. *Calyx* lilac (dark maroon near base of anthers), 7 mm long, almost glabrous within, white stellate tomentose outside, divided to the base into 5 linear-lanceolate lobes. *Petals* 5, orbicular, 0·5 mm long. *Anthers* 5, almost sessile,



HERBARIUM GARDNERIANUM

Made available to the
 WESTERN AUSTRALIAN HERBARIUM
 by the Lord Abbot and Members
 of the Benedictine Community of
 New Norcia June 1970

1970

C. A. Gardner: Plantae Australiae occidentalis

N.

1973
 1973
 1973

leg. C. A. Gardner

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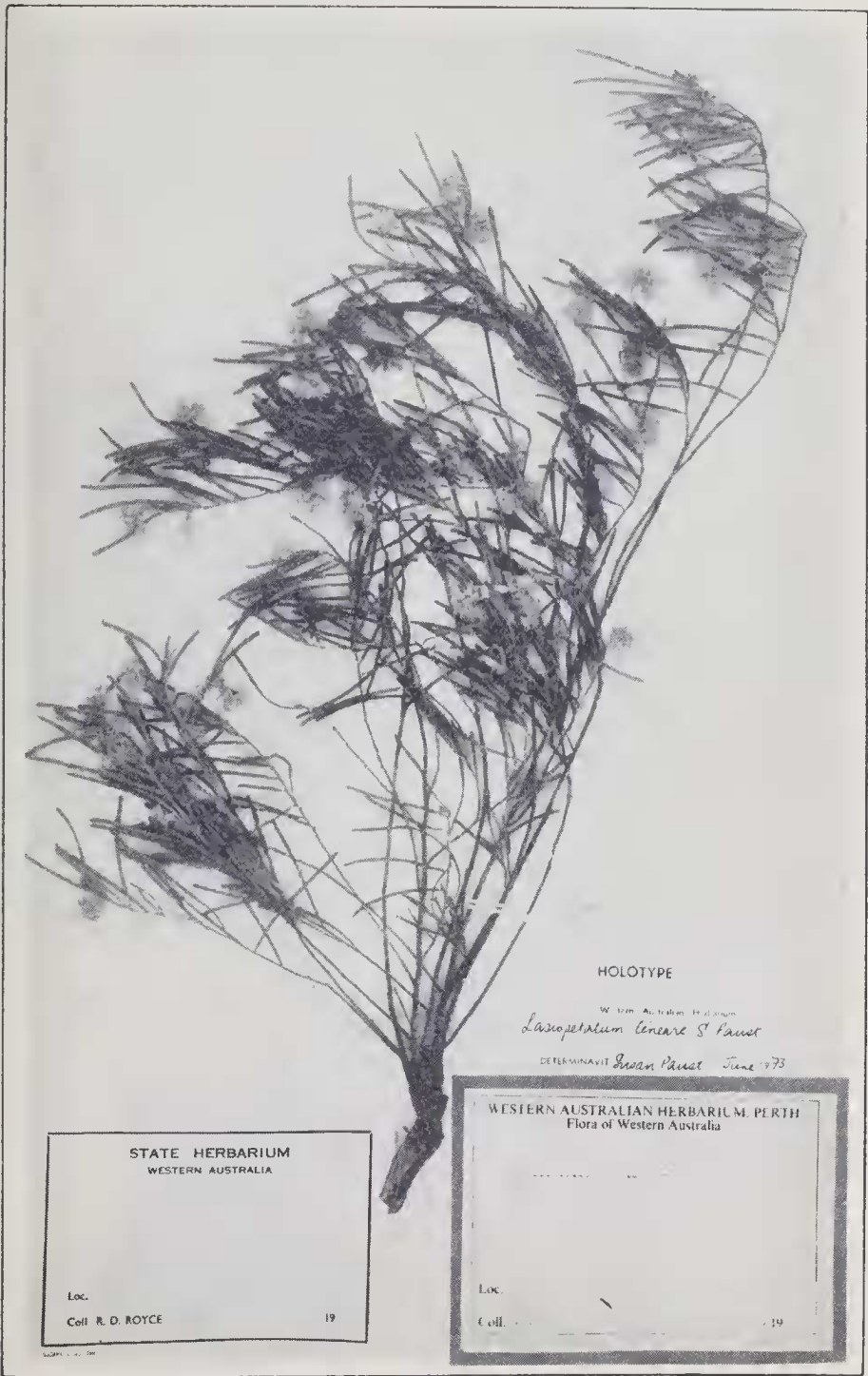
HOLOTYPE

Western Australian Herbarium
Thomasia gardneri S. Panot
 Determined Susan Panot June 1973

WESTERN AUSTRALIAN HERBARIUM, PERTH
 Flora of Western Australia
 1973
HERBARIUM GARDNERIANUM

Loc
 Coll. C. A. GARDNER
 19

Figure 4—*Thomasia gardneri* sp. nov. Holotype—Near Mt. Holland, C. A. Gardner.



HOLOTYPE

W. from Australia Herbarium

Lasiopetalum lineare S. Paul

DETERMINAVIT Susan Paul June 1973

STATE HERBARIUM
WESTERN AUSTRALIA

Loc.

Coll. R. D. ROYCE

19

WESTERN AUSTRALIAN HERBARIUM, PERTH
Flora of Western Australia

Loc.

Coll.

19

Figure 5—*Lasiopetalum lineare* sp. nov. Holotype—R. D. Royce 4965.

broadly oblong, 1.5 mm long. *Ovary* globose, 1 mm long, white stellate-tomentose, 3-celled; style filiform, 3 mm long, with large white reflexed stellate hairs; ovules 2 per locule. *Fruit* a loculicidal capsule; seeds 1 per locule, almost cylindrical, villous, 2.5 mm long, 1 mm wide.

Distribution: South-west Western Australia, from Eneabba south to Gingin.

Eneabba Creek, *C. A. Gardner* 9128; 26½ mi from Watheroo on road to Jurien Bay, *F. W. Humphreys* 183; 5 mi SSE of Yeal Swamp in Wanneroo Forestry Reserve, *Y. Chadwick* 2554.

Lasiopetalum lineare has floral characteristics similar to those of *L. drummondii* Benth., but is distinguished by having linear leaves.

***Lasiopetalum rotundifolium* S. Paust sp. nov. (Figures 6 and 12)**

(rotundus = almost circular, folium = leaf)

Folia rotunda, profunde cordata, petiolata, 7–35 x 9–30 mm, supra rugosa glabra, subtus arcte stellato-tomentosa. *Cymae* pilis stellatis et simplici-moniliformibus tomentosae. *Bracteolae* solitariae, ovatae, ab calycibus distantes. *Calyx* 6 mm longus, intus glaber, extus pilis stellatis et simplici-moniliformibus tomentosus, lobis 5, ovato-lanceolatis. *Petala* nulla. *Antherae* fere sessiles, late ovato-oblongae, 2 mm longae. *Ovarium* 3-loculare, 1.5 mm longum, albo-stellato-tomentosum. *Stylus* 2 mm longus pilis stellatis grandibus reflexis albis hirsutus.

Type: 5–6 mi S of New Norcia, Western Australia, 1 Oct. 1947, *C. A. Gardner* 8690. Holo: PERTH, iso: CANB, K.

Erect, woody *perennial*, up to 40 cm high. *Braunchlets* tomentose with stellate and simple hairs. *Leaves* alternate; petiole 10–20 mm long, tomentose with stellate and simple-moniliform hairs; lamina orbicular, deeply cordate (the basal lobes sometimes imbricate), 7–35 mm long, 9–30 mm wide, rugose and glabrous above, closely grey stellate-tomentose below; margin ± crenulate slightly revolute. *Cymes* leaf-opposed, 20–40 mm long, ± 8-flowered, tomentose with stellate and simple-moniliform hairs; peduncle 10–20 mm long; bracts lanceolate, 3 mm long; bracteoles 1, ovate, 5 mm long, pink, papery, distant from calyx. *Calyx* pink (dark maroon near base of anthers), 6 mm long, almost glabrous within, tomentose with stellate and long simple-moniliform hairs outside, divided to near the base into 5 ovate lanceolate lobes. *Petals* absent. *Anthers* 5, almost-sessile, broadly ovate-oblong, dark maroon, 2 mm long. *Ovary* globose, 1.5 mm long, white stellate-tomentose, 3-celled; style simple, 2 mm long with large white reflexed stellate hairs; ovules 2 per locule. *Seed* not seen.

Distribution: South-west Western Australia; New Norcia area.

Swan River Colony, *J. Drummond* 119 (MEL 52366).

Lasiopetalum rotundifolium is known only from the Drummond and type collections. It has close affinities with *L. molle* Benth., but differs in having rounded, deeply cordate leaves.

***Lasiopetalum cardiophyllum* S. Paust. sp. nov. (Figures 7 and 12)**

(cardio = heart, phyllum = leaf)

Folia cordata, petiolata, 9–26 x 10–30 mm, coriacea, supra laevia glabra, subtus arcte stellata, tomentosa. *Cymae* pilis stellatis et simplici-moniliformibus tomentosae. *Bracteolae* solitariae, teretes, ab calycibus distantes. *Calyx* 8 mm longus, pilis stellatis et simplici-moniliformibus tomentosus, lobis 5, ovato-lanceolatis. *Petala* nulla. *Antherae* 5, fere sessiles, late ovato-oblongae, 1.5 mm longae. *Ovarium* 3-loculare, 1 mm longum, albo-stellato-tomentosum. *Stylus* 2.5 mm longus, pilis stellatis grandibus reflexis albis hirsutus.

Type: Mt. Saddleback, Darling Range, Western Australia, 13 Nov. 1904, *A. Morrison* s.n. Holo: PERTH.

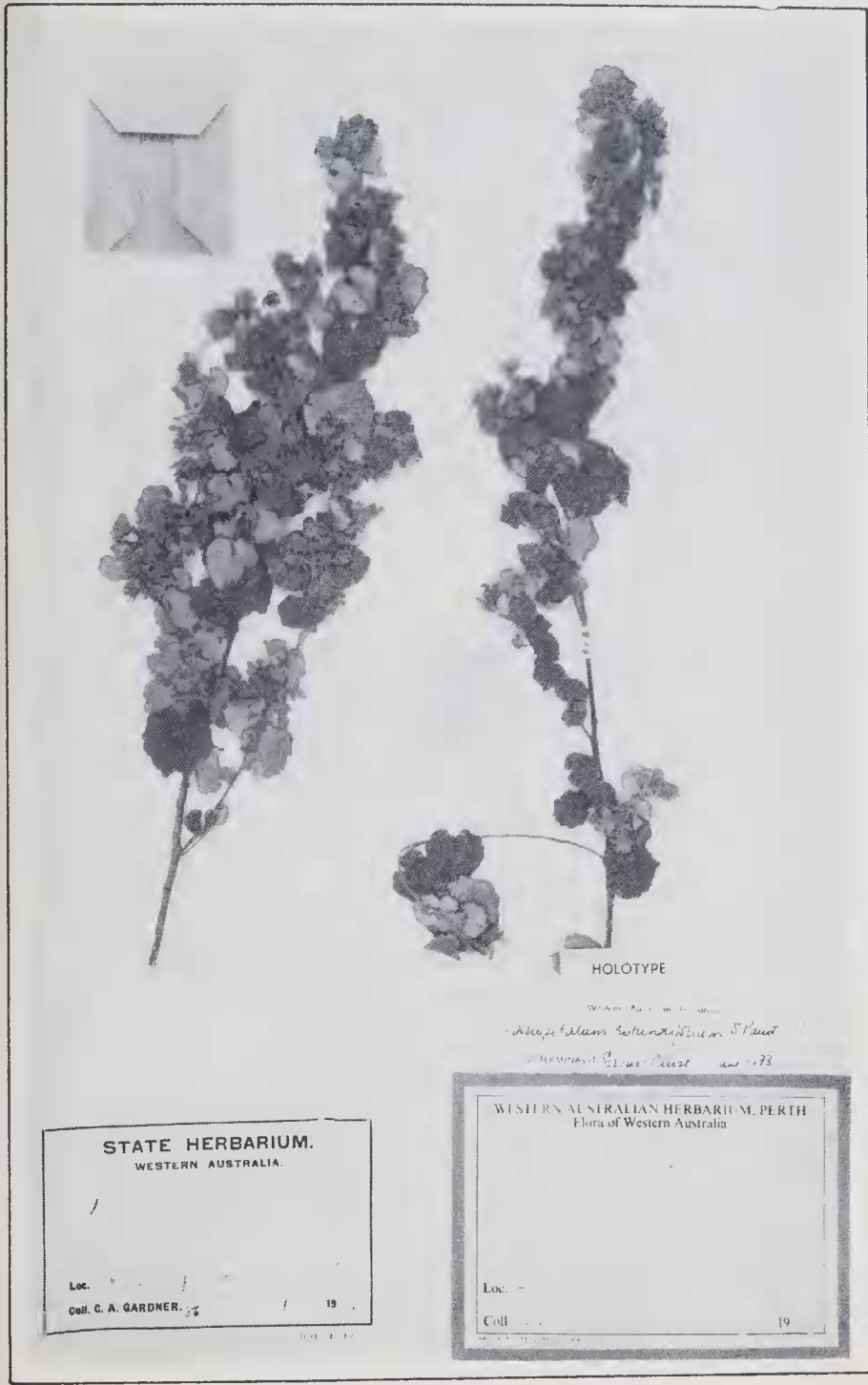


Figure 6—*Lasiopetalum rotundifolium* sp. nov. Holotype—C. A. Gardner 8690.



HOLOTYPE

Western Australian Herbarium

Lasiopetalum cardiophyllum S. Lawl.

DETERMINAVIT Susan Lawl June 1973

STATE HERBARIUM,
WESTERN AUSTRALIA.

Lasiopetalum cardiophyllum

Loc.

Coll.

10.10.73

WESTERN AUSTRALIAN HERBARIUM PERTH
Flora of Western Australia

Loc.

Coll.

19

Figure 7—*Lasiopetalum cardiophyllum* sp. nov. Holotype—Mt. Saddleback, A. Morrison.

Erect multistemmed, woody *perennial*, up to 40 cm high. *Branchlets* stellate-tomentose. *Leaves* alternate; petiole 4–15 mm long; lamina cordiform, 9–26 mm long, 10–30 mm wide, entire, coriaceous, smooth and almost glabrous above, closely grey stellate-tomentose below. *Cymes* leaf-opposed, 20–40 mm long, 5- many-flowered, sparsely tomentose with stellate and simple-moniliform hairs; peduncle 10–20 mm long; pedicels 10 mm long; bracts terete, 2 mm long, closely tomentose; bracteoles 1, terete, 2 mm long, closely tomentose, distant from calyx. *Calyx* pink (dark maroon near base of anthers), 8 mm long, tomentose with stellate and simple-moniliform hairs, divided to the base into 5 narrowly ovate-lanceolate acuminate lobes. *Petals* absent. *Anthers* 5, almost sessile, broadly ovate-oblong, 1.5 mm long, purple-black. *Ovary* globose, 1 mm long, white stellate-tomentose, 3-celled; style filiform, 2.5 mm long, with large white-reflexed stellate hairs; ovules 2 per locule. *Seed* not seen.

Distribution: South-west Western Australia; from North Bannister south to Mt. Saddleback.

Bunnings Plantation, 3 mi S of Halfway House on Albany Highway and 7 mi W of Highway, 21 Nov. 1969, *R. J. Edmiston*; towards Mt. Saddleback, between Williams and Hotham Rivers, 15 Nov. 1904, *A. Morrison* (K).

Lasiopetalum cardiophyllum has flowers similar to those of *L. floribundum* Benth. but is distinguished by having coriaceous, broadly ovate-cordate leaves which are stellate-tomentose below.

Lasiopetalum glabratum S. Paust. sp. nov. (Figures 8 and 12)

(glabratum = glabrescent, referring to the leaves)

Folia late ovata ad semi-hastata vel cordata, petiolata, 10–30 x 6–30 mm, coriacea, fere glabra, supra reticulata, subtus manifeste nervata. *Cymae* pilis stellatis et simplici-moniliformibus tomentosae. *Bracteolae* solitariae, lineares, calyces subtus. *Calyx* 5 mm longus, sparsim stellato-tomentosus, extus etiam pilis simplici-moniliformibus, lobis 5, ovato-lanceolatis. *Petala* nulla. *Antherae* 5, fere sessiles, late ovato-oblongae, 1.5 mm longae. *Ovarium* 3-loculare, 1 mm longum, albo-stellato-tomentosum. *Stylus* 2.5 mm longus, pilis stellatis grandibus reflexis albis hirsutus.

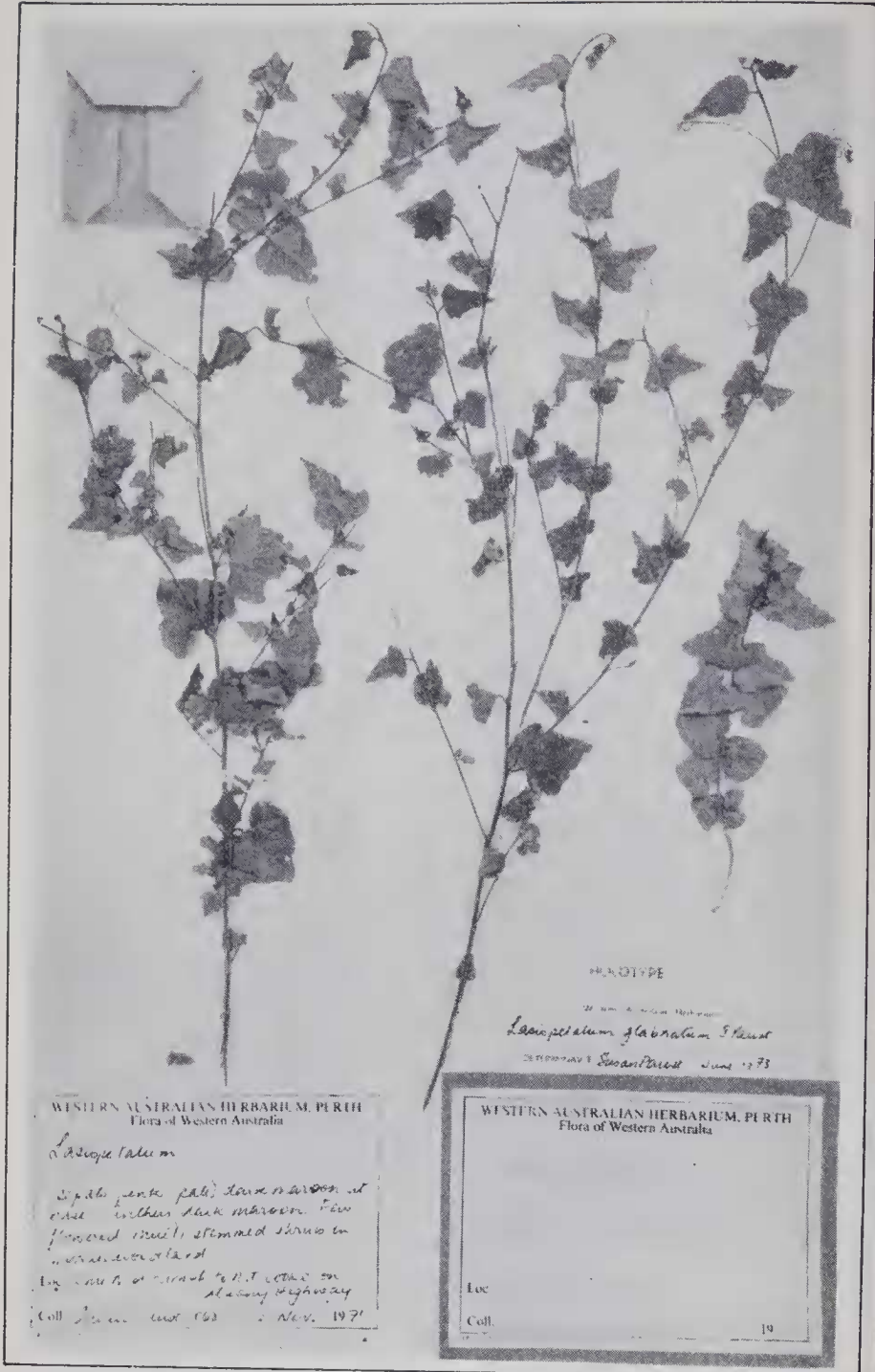
Type: 2 mi N of turnoff to Mt. Cooke on Albany Highway, Western Australia, 6 Nov. 1971, *Susan Paust* 1068. *Holo*: PERTH.

Erect, multistemmed, woody *perennial*, up to 35 cm high. *Branchlets* stellate-tomentose. *Leaves* alternate; petiole stellate-tomentose, 3–6 mm long; lamina broadly ovate to semi-hastate, cordate, obtuse to acute, 10–30 mm long, 6–30 mm wide, coriaceous, undulate, almost glabrous, reticulate above, prominently veined below; margin semi-entire, slightly undulate and recurved. *Cyme* leaf-opposed, 30–50 mm long, 3–6-flowered, tomentose with stellate and simple-moniliform hairs; peduncle 20–30 mm long; pedicels 8 mm long; bracts linear, 2 mm long; bracteoles 1, linear, 2 mm long, subtending calyx. *Calyx* pink (dark maroon near base of anthers), 5 mm long, sparsely stellate-tomentose, the outer surface with additional simple-moniliform hairs, divided to the base into 5 ovate-lanceolate lobes. *Petals* absent. *Anthers* 5, almost sessile, broadly ovate-oblong, 1.5 mm long, purple-black. *Ovary* globose, 1 mm long, white stellate-tomentose, 3-celled; style filiform, 2.5 mm long, with large white reflexed stellate hairs; ovules 2 per locule. *Seed* not seen.

Distribution: South-west Western Australia: south-east of Perth, from Carmel east to York and south to Mt. Cooke.

Carmel, 29 Nov. 1928 *E. Dell*; 44 mi peg Albany Highway, *A. R. Fairall* 1711; between Perth and King George Sound, April, July 1854, *W. H. Harvey*; Swan River Colony, *J. Drummond* 20 (K).

This species has floral similarities to *L. floribundum* Benth. and *L. cardiophyllum* S Paust. (see above). It is distinguished from both in having coriaceous, undulate, almost glabrous leaves.



WESTERN AUSTRALIAN HERBARIUM, PERTH
Flora of Western Australia

Lasiopetalum

Sp. fl. pink (pale) lower margin of
ovule rather dark maroon. Few
flowered multi-stemmed shrubs in
open woodland

100 m. N. of road to Mt. Cootan on
Stirling Highway

Coll. S. Paust 1068 Nov. 1971

HOLOTYPE

WESTERN AUSTRALIAN HERBARIUM, PERTH
Flora of Western Australia

Lasiopetalum glabratum S. Paust

Collected by S. Paust June 1973

Loc.

Coll.

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Figure 8—*Lasiopetalum glabratum* sp. nov. Holotype—S. Paust 1068.



Lasiopetalum monticola sp. nov.
 Camp. 2007. Ellen Peak, A. Morrison.
 10.10.2007. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 848. 849. 850. 851. 852. 853. 854. 855. 856. 857. 858. 859. 860. 861. 862. 863. 864. 865. 866. 867. 868. 869. 870. 871. 872. 873. 874. 875. 876. 877. 878. 879. 880. 881. 882. 883. 884. 885. 886. 887. 888. 889. 890. 891. 892. 893. 894. 895. 896. 897. 898. 899. 900. 901. 902. 903. 904. 905. 906. 907. 908. 909. 910. 911. 912. 913. 914. 915. 916. 917. 918. 919. 920. 921. 922. 923. 924. 925. 926. 927. 928. 929. 930. 931. 932. 933. 934. 935. 936. 937. 938. 939. 940. 941. 942. 943. 944. 945. 946. 947. 948. 949. 950. 951. 952. 953. 954. 955. 956. 957. 958. 959. 960. 961. 962. 963. 964. 965. 966. 967. 968. 969. 970. 971. 972. 973. 974. 975. 976. 977. 978. 979. 980. 981. 982. 983. 984. 985. 986. 987. 988. 989. 990. 991. 992. 993. 994. 995. 996. 997. 998. 999. 1000.

HOLOTYPE

Lasiopetalum monticola S. Paul
 DETERMINAVIT Swan West June 1973

WESTERN AUSTRALIAN HERBARIUM, PERTH
 Flora of Western Australia

Loc
 19

STATE HERBARIUM,
 WESTERN AUSTRALIA

Lasiopetalum monticola sp. nov.

Loc. 2007 Ellen Peak A.
 Coll. 10.10.2007

Figure 9—*Lasiopetalum monticola* sp. nov. Holotype—Ellen Peak, A. Morrison.

Lasiopetalum monticola S. Paust. sp. nov. (Figures 9 and 12)

(*monticola* = a dweller on mountains)

Folia late ad anguste ovata, petiolata, 15–18 x 5–40 mm, supra laevia glabrescentia, subtus dense stellato-tomentosa. *Racemi* dense stellato-tomentosi. *Bracteolae* 3, filiformes, ab calyce distantes. *Calyx* 6 mm longus, intus sparsim stellato-hirsutus, extus dense albo-stellato-tomentosus, lobis 5, anguste ovatis. *Petala* 5, oblonga, 0·5 mm longa. *Antherae* 5, fere sessiles, anguste triangulares, 3 mm longae. *Ovarium* 3-loculare, 1 mm longum, papillatum. *Stylus* 2 mm longus, glaber.

Type: Ellen Peak, Stirling Range, Western Australia, 18 Oct. 1902, A. Morrison. *Holo*: PERTH, iso: CANB, K.

Erect, woody, *perennial* up to 50 cm high; branchlets, leaves and inflorescence densely stellate-tomentose, white to rufous. *Leaves* alternate; petiole 10–20 mm long; lamina broadly to narrowly ovate, entire, 15–80 mm long, 5–40 mm wide, smooth and becoming glabrous with impressed veins above, densely stellate-tomentose with prominent midrib below. *Raceme* leaf-opposed, 3–15-flowered, 40–110 mm long; peduncle 30–60 mm long; bracts terete, 5 mm long; bracteoles 3, filiform, 8 mm long, distant from calyx. *Calyx* 6 mm long, pink, sparsely white stellate-hairy within, densely white stellate-tomentose outside, divided almost to the base into 5 narrowly ovate lobes. *Petals* 5, oblong, concave, 0·5 mm long, glabrous. *Anthers* 5, almost sessile, narrowly triangular, 3 mm long. *Ovary* globose 1 mm long, papillate, 3-celled; style filiform, 2 mm long, glabrous, ovules 2 per locule. *Seed* not seen.

Distribution: South-west Western Australia; in the Stirling Range and on East Mt. Barren.

Stirling Range, E. Pritzel 701; Plantagenet Dist. Stirling Range, Diels 580; Mt. Warrungup, K. Newbey 1456; about half way along Salt River Road, Stirling Range, A. M. Ashby 1965; Eastern heights above Red Gum Springs, A. R. Fairall 465 and 471; 3 mi N of Ellen Peak, K. Newbey 315; East Mt. Barren, Sept. 1925. Gardner & Blackall; Gully, East Mt. Barren, Sept. 1924, A. Johnson.

Lasiopetalum monticola is similar in habit and appearance to *L. indutum* Steud. and *L. maxwellii* F. Muell., but is readily distinguished from these species by the papillate (rather than stellate-tomentose) ovary.

Lasiopetalum compactum S. Paust. sp. nov. (Figures 10 and 12)

(*compactum* = compact referring to the inflorescence)

Folia anguste oblonga, petiolata, 10–60 x 4–13 mm, coriacea, supra laevia glabra, subtus arcte stellato-tomentosa. *Cymae* in pseudo-capitula contractae. *Bracteolae* 3 lineares, calycem subtus. *Calyx* 5–8 mm longus, intus minute tuberculatus, extus dense albo-stellato-tomentosus, lobis 5, anguste ovatis acuminatis. *Petala* spatulata, 1 mm longa. *Stamina* 5, filamentis 1 mm longis, antheris anguste-triangularibus 2·5 mm longis. *Ovarium* 3-loculare, 2 mm longum, albo-stellato-tomentosum. *Stylus* 3 mm longus, glaber.

Type: 9 km SE of Ravensthorpe, Western Australia, 13 Aug. 1968, R. A. Saffrey 477. *Holo*: PERTH, iso: CANB, K.

Erect, woody, *perennial*, up to 1 m high. *Branchlets* closely stellate-tomentose, rufous to grey. *Leaves* alternate; petiole 5–7 mm long, closely stellate-tomentose; lamina narrowly oblong, entire, coriaceous, 10–60 mm long, 4–13 mm wide, smooth and glabrous with impressed midrib above, closely stellate-tomentose with prominent midrib below. *Cymes* leaf-opposed, 5–7-flowered, condensed into densely white stellate-tomentose heads; peduncle tomentose, 5–15 mm long; bracts linear, 5 mm long; bracteoles 3, linear, 7 mm long, subtending calyx. *Calyx* 5–8 mm long, pink and minutely tuberculate within, densely white stellate-tomentose outside, divided almost to the base into 5 narrowly ovate, acuminate lobes. *Petals* spatulate, slightly concave, 1 mm long glabrous. *Stamens* 5, filaments terete, 1 mm long; anthers narrowly triangular, 2·5 mm long. *Ovary* globose, 2 mm long, white stellate-tomentose, 3-celled; style filiform, 3 mm long, glabrous; ovules 2 per locule. *Fruit* a loculicidal capsule; seed 2 per locule, almost cylindrical, villous, 2 mm long, 1 mm wide.



HOLOTYPE

Western Australian Herbarium

Lasiopetalum compactum S. Paul

LESTERMINAVIT Susan Paul June 1973

WESTERN AUSTRALIAN HERBARIUM, PERTH
Flora of Western Australia

Loc.

Coll.

19

WESTERN AUSTRALIAN HERBARIUM, PERTH
Flora of Western Australia

Loc.

Coll.

19

Figure 10—*Lasiopetalum compactum* sp. nov. Holotype—R. A. Saffrey 477.

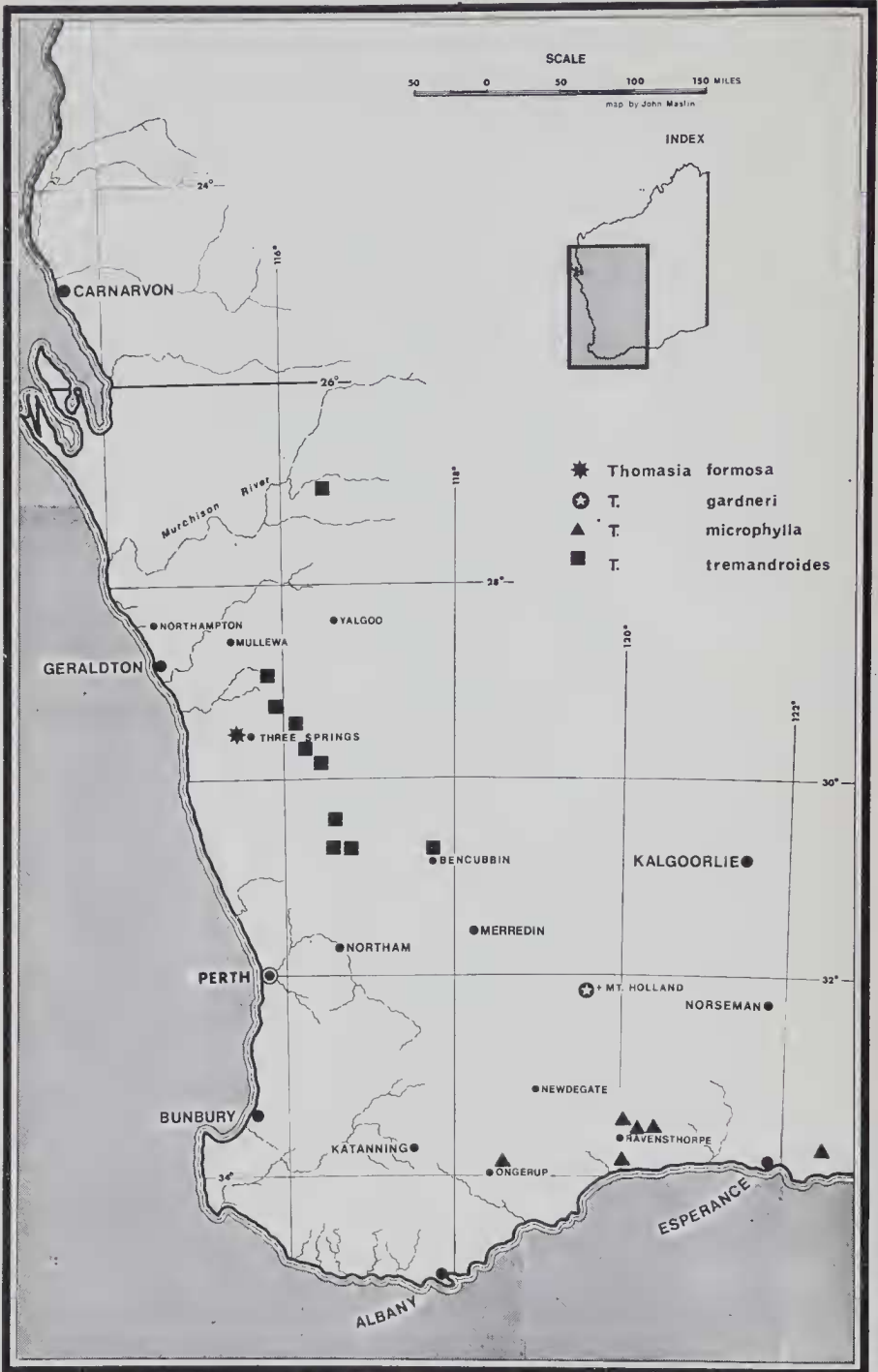


Figure 11—Distribution of *Thomsia formosa* sp. nov., *T. gardneri* sp. nov., *T. microphylla* sp. nov. and *T. tremandroides* sp. nov.

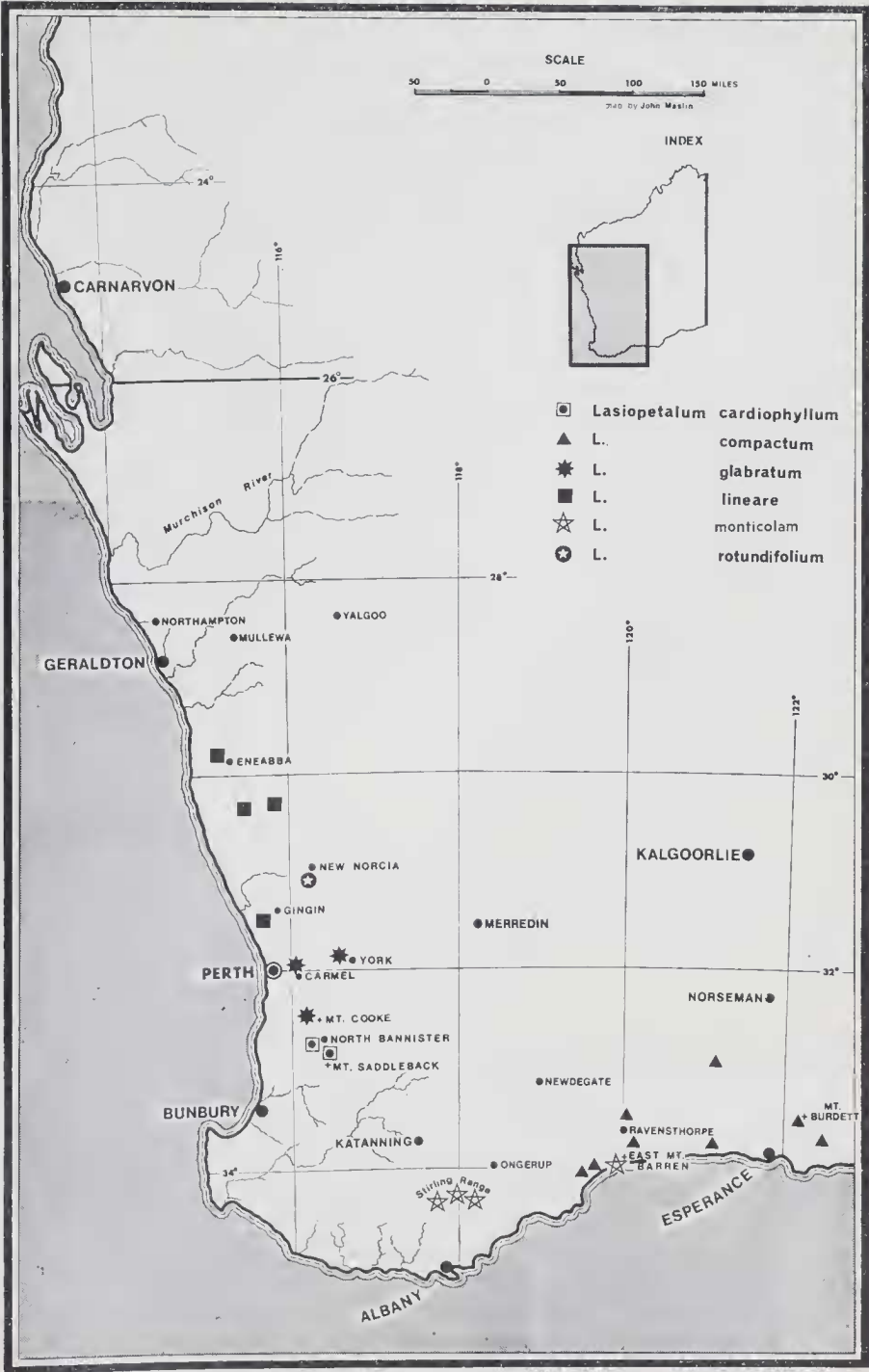


Figure 12—Distribution of *Lasiopetalum cardiophyllum* sp. nov., *L. compactum* sp. nov., *L. glabratum* sp. nov., *L. lineare* sp. nov., *L. monticola* sp. nov., and *L. rotundifolium* sp. nov.

Distribution: South-west Western Australia, from the Fitzgerald River east to Mt. Burdett.

Fitzgerald R. valley, *R. D. Royce* 8906; Mt. Short, Ravensthorpe Range, *E. M. Bennett* 2494; 6 mi E of Ravensthorpe, *K. Newbey* 958; Between Ravensthorpe and Hopetoun, *S. Paust* 759; Yerritup Creek, 13 km N of coast at Stokes Inlet, *A. E. Orchard* 1188; Peak Charles, *C. Davies* 89; Mt. Burdett, 50 km NNE of Esperance, *E. N. S. Jackson* 1319; Swan River Colony, *J. Drummond* 264 (also MEL 52342, L.H. specimen).

The floral characters of *L. compactum* and *L. indutum* Steud. are similar and have previously caused confusion. *L. compactum*, however, is readily distinguished from the racemose *L. indutum* by the compact cyme and larger leaves.

New Synonyms in *Lasiopetalum*

1. *Lasiopetalum oppositifolium* F. Muell., *Fragm.* 2:5 (1860).

Type: Murchison River, Western Australia, *Oldfield*. Holo: MEL 52371.

L. angustifolium W. V. Fitzg., *J. West Austral. Nat. Hist. Soc.* No. 1:3 (1904), *synon. nov.*

Type: Geraldton, Western Australia, Sept. 1903, *W. V. Fitzgerald*. Iso: PERTH.

Lasiopetalum angustifolium was described by W. V. Fitzgerald as differing from *L. oppositifolium* by the presence of white reflexed hairs on the style. The examination of type and other herbarium collections has shown that the hairiness of the style is extremely variable, while the specimens are similar in other characters. It is therefore considered that the two are synonymous.

2. *Lasiopetalum indutum* Steud. in *Lehmann, Pl. Preiss.* 1:235 (1845).

Type: *Preiss* 1655. Iso: MEL 52353-4.

L. acutiflorum Turcz., *Bull. Soc. Imp. Naturalistes Moscou* 25:145 (1852), *synon. nov.*

Type: *J. Drummond* 254. Iso: MEL 52342, right hand specimen; MEL 52343; PERTH.

The two species are separated by Bentham in *Fl. Austral.* 1:259-260 (1863) by the degree of hairiness of the inside of the calyx lobes. From examination of the type and other herbarium collections, this character and leaf shape appear continuously variable. The two names are therefore considered synonymous.

Acknowledgement

Thanks are especially due to Mr. Alex George for the latin diagnoses.